Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-25. (Cancelled)

Claim 26. (Previous Presented): A method for preventing or treating disease in a patient, comprising reactivating the thymus of the patient.

Claim 27. (Previously Presented): The method of claim 26, wherein the thymus of the patient has been at least in part atrophied before it is reactivated.

Claim 28. (Previously Presented): The method of claim 27, wherein the patient has a disease that at least in part atrophied the thymus of the patient.

Claim 29. (Previously Presented): The method of claim 27, wherein the patient has had a treatment of a disease that at least in part atrophied the thymus of the patient.

Claim 30. (Previously Presented): The method of claim 29, wherein the treatment is immunosuppression, chemotherapy, or radiation treatment.

Claim 31. (Previously Presented): The method of claim 27, wherein the patient is post-pubertal.

Claim 32. (Previously Presented): The method of claim 26, further comprising administering cells to the patient, wherein the cells are stem cells, progenitor cells, dendritic cells, or combinations thereof.

Claim 33. (Previously Presented): The method of claim 32, wherein the stem cells are selected from the group consisting of hematopoietic stem cells, epithelial stem cells, and combinations thereof.

Claim 34. (Previously Presented): The method of claim 32, wherein the progenitor cells are selected from the group consisting of lymphoid progenitor cells, myeloid progenitor cells, and combinations thereof.

Claim 35. (Cancelled)

Claim 36. (Previously Presented): The method of claim 33, wherein the stem cells are hematopoietic stem cells.

Claim 37. (Previously Presented): The method of claim 36, wherein the hematopoietic stem cells are $CD34^+$.

Claim 38. (Previously Presented): The method of claim 32, wherein the cells are autologous.

Claim 39. (Previously Presented): The method of claim 32, wherein the cells are not autologous.

Claim 40. (Previously Presented): The method of claim 32, wherein the cells are administered when the thymus begins to reactivate.

Claim 41. (Previously Presented): The method of claim 26, wherein the thymus is reactivated by disruption of sex steroid-mediated signaling to the thymus.

Claim 42. (Previously Presented): The method of claim 41, further comprising administering cells to the patient, wherein the cells are stem cells, progenitor cells, dendritic cells, or combinations thereof.

Claim 43. (Previously Presented): The method of claim 42, wherein the stem cells are selected from the group consisting of hematopoietic stem cells, epithelial stem cells, and combinations thereof.

Claim 44. (Previously Presented): The method of claim 42, wherein the progenitor cells are selected from the group consisting of lymphoid progenitor cells, myeloid progenitor cells, and combinations thereof.

Claim 45. (Cancelled)

Claim 46. (Previously Presented): The method of claim 43, wherein the cells are hematopoietic stem cells.

Claim 47. (Previously Presented): The method of claim 42, wherein the cells are administered at the time disruption of sex steroid-mediated signaling to the thymus is begun.

Claim 48. (Previously Presented): The method of claim 41, wherein the sex steroid-mediated signaling to the thymus is disrupted by surgical castration.

Claim 49. (Previously Presented): The method of claim 41, wherein the sex steroid-mediated signaling to the thymus is disrupted by chemical castration.

Claim 50. (Previously Presented): The method of claim 41, wherein the sex steroid-mediated signaling to the thymus is disrupted by administration of a pharmaceutical.

Claim 51. (Previously Presented): The method of claim 50, wherein the pharmaceutical is selected from the group consisting of LHRH agonists, LHRH antagonists, anti-LHRH vaccines, anti-androgens, anti-estrogens, SERMs, SARMs, SPRMs, ERDs, aromatase inhibitors, anti-progestogens, Dioxalan derivatives, and combinations thereof.

Claim 52. (Previously Presented): The method of claim 51, wherein the LHRH agonists are selected from the group selected from the group consisting of Goserelin, Leuprolide, Lupron, Triptorelin, Meterelin, Buserelin, Histrelin, Nafarelin, Lutrelin, Leuprorelin, Deslorelin, Cystorelin, Decapeptyl, Gonadorelin, and combinations thereof.

Claim 53. (Previously Presented): The method of claim 51, wherein the LHRH antagonists are selected from the group consisting of Abarelix, Cetrorelix, and combinations thereof.

Claim 54. (Previously Presented): The method of claim 26, wherein clinical symptoms of the disease are reduced as compared to those symptoms that would have otherwise occurred in a patient prior to thymus reactivation.

Claim 55. (Previously Presented): The method of claim 26, wherein the disease is caused by an agent selected from the group consisting of viruses, bacteria, fungi, parasites, prions, cancers, allergens, asthma-inducing agents, "self" proteins and antigens which cause autoimmune disease.

Claim 56. (Previously Presented): The method of claim 55, wherein the agent is a virus.

Claim 57. (Previously Presented): The method of claim 56, wherein the virus is selected from the group consisting of Retroviridae, Picornaviridae, Calciviridae, Togaviridae, Flaviridae, Coronaviridae, Rhabdoviridae, Filoviridae, Paramyxoviridae, Orthomyxoviridae, Bungaviridae,

Arenaviridae, Reoviridae, Birnaviridae, Hepadnaviridae, Parvoviridae, Papovaviridae, Adenoviridae, Herpesviridae, Poxviridae, and Iridoviridae.

Claim 58. (Previously Presented): The method of claim 56, wherein the virus is selected from the group consisting of influenza virus, human immunodeficiency virus, and herpes simplex virus.

Claim 59. (Previously Presented): The method of claim 55, wherein the agent is a bacterium.

Claim 60. (Previously Presented): The method of claim 59, wherein the bacterium is selected from the group consisting of *Helicobacter pylori, Borelia burgdorferi, Legionella pneumophilia, Mycobacterium tuberculosis, Mycobacterium avium, Mycobacterium intracellulare, Mycobacterium kansaii, Mycobacterium gordonae, Mycobacteria* sporozoites, *Staphylococcus aureus, Neisseria gonorrhoeae, Neisseria meningitidis, Listeria monocytogenes, Streptococcus pyogenes, Streptococcus agalactiae, Streptococcus faecalis, Streptococcus bovis, Streptococcus pneumoniae,* pathogenic *Campylobacter* sporozoites, *Enterococcus* sporozoites, *Haemophilus influenzae, Bacillus anthracis, Corynebacterium diphtheriae, Corynebacterium* sporozoites, *Erysipelothrix rhusiopathiae, Clostridium perfringens, Clostridium tetani, Enterobacter aerogenes, Klebsiella pneumoniae, Pasturella multocida, Bacteroides* sporozoites, *Fusobacterium nucleatum, Streptobacillus moniliformis, Treponema pallidium, Treponema pertenue, Leptospira,* and *Actinomyces israelli.*

Claim 61. (Previously Presented): The method of claim 59, wherein the bacteria is a mycobacterium.

Claim 62. (Previously Presented): The method of claim 55, wherein the agent is a parasite.

Claim 63. (Previously Presented): The method of claim 60, wherein the parasite is selected from the group consisting of *Plasmodium falciparum, Plasmodium yoelli,* and *Toxoplasma gondii.*

Claim 64. (Previously Presented): The method of claim 62, wherein the parasite is a malaria parasite.

Claim 65. (Previously Presented): The method of claim 55, wherein the agent is an infectious fungus.

Claim 66. (Previously Presented): The method of claim 65, wherein the infectious fungus is selected from the group consisting of *Cryptococcus neoformans, Histoplasma capsulatum, Coccidioides immitis, Blastomyces dermatitidis, Chlamydia trachomatis, Candida albicans.*

Claim 67. (Previously Presented): The method of claim 55, wherein the agent is a cancer.

Claim 68. (Previously Presented): The method of claim 67, wherein the cancer is selected from the group consisting of a cancer of the brain, a cancer of the lung, a cancer of the ovary, a cancer of the breast, a cancer of the prostate, a cancer of the colon, a cancer of the blood, a carcinoma, a melanoma, a sarcoma, and any combination thereof.

Claim 69. (Previously Presented): The method of claim 55, wherein the agent is an allergen.

Claim 70. (Previously Presented): The method of claim 69, wherein the allergen causes an allergic condition selected from the group consisting of eczema, allergic rhinitis, allergic coryza, hay fever, bronchial asthma, urticaria (hives), and food allergies.

Claims 71-72. (Cancelled)

Claim 73. (Previously Presented): The method of claim 26, further comprising administering a cytokine, a growth factor, or a combination of a cytokine and a growth factor to the patient.

Claim 74. (Previously Presented): The method of claim 73, wherein the cytokine is selected from the group consisting of Interleukin 2 (IL-2), Interleukin 3 (IL-3), Interleukin 4 (IL-4), Interleukin 5 (IL-5), Interleukin 6 (IL-6), Interleukin 7 (IL-7), Interleukin 10 (IL-10), Interleukin 12 (IL-12), Interleukin 15 (IL-15), Interferon gamma (IFN-γ), and any combinations thereof.

Claim 75. (Previously Presented): The method of claim 73, wherein the growth factor is selected from the group consisting of a member of the epithelial growth factor family, a member of the fibroblast growth factor family, stem cell factor, granulocyte colony stimulating factor (G-CSF), keratinocyte growth factor (KGF), insulin-like growth factor-1 (IGF-1), a growth hormone, a thyroid hormone, and any combinations thereof.

Claims 76-79. (Cancelled)

Claim 80. (Previously Presented): A method for increasing virus-specific peripheral T cell responsiveness of a patient with an at least partially atrophied thymus, comprising:

reactivating the thymus of the patient;

exposing the patient to a virus; and

determining the virus-specific peripheral T cell responsiveness in the patient,

wherein the patient has an increased viral-specific peripheral T cell responsiveness as compared to the responsiveness that would have otherwise occurred in a patient prior to thymus reactivation.

Claim 81. (Previously Presented): The method of claim 38, wherein the cells are genetically modified.

Claim 82. (Previously Presented): The method of claim 41, wherein the sex steroid-mediated signaling to the thymus is disrupted by lowering the level of a sex steroid hormone.

Claim 83. (Previously Presented): The method of claim 26, wherein the patient is immunosuppressed.

Claim 84. (Previously Presented): The method of claim 51, wherein the anti-androgen is Eulexin or ketoconazole.